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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/297,703	07/19/99	JOBLING S	CASE#1637

HM12/0713

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EXAMINER	
KUBELIK,A	
ART UNIT	**PAPER NUMBER**
1638	15

DATE MAILED: 07/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/297,703	Applicant(s) JOBLING ET AL.	
	Examiner Anne Kubelik	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 1999 and 03 November 2000* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-32* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

Election/Restrictions

1. Applicant's election with traverse of Group I (claims 1-11, 16-27 and 32) in Paper No. 7 is acknowledged. The traversal is on the ground(s) that the nucleic acids of Group I encode the polypeptides of Group II, and the starches of Group III are obtainable from a plant of Group I; thus, the inventions are not separate and distinct.

This is not found persuasive because a protein is not obvious over the polynucleotide that encodes it, and the polynucleotide of Group I and the polypeptide of Group II are not linked simply because the polynucleotide encodes the polypeptide. The polypeptide is not directly made from the DNA molecule that encodes it. While the nucleic acid sequence may provide researchers the amino acid sequence of the initially-translated protein, it does not allow them to accurately predict properties of the protein like K_m, temperature maximum, or even molecular weight of the processed protein. The protein can be isolated from nontransformed cassava and characterized in detail without knowledge of the DNA that encodes it, and in fact, many proteins were isolated and characterized years before DNA cloning and sequencing were possible. Thus, the proteins of Group II are separate and distinct from the nucleic acids of Group I.

The altered starch of Group III can be produced by *in vitro* modification of starch, for example by incubation with enzymes or by chemical modification. Thus, the starch is separate and distinct from both the plants of Group I and the proteins of Group II.

The requirement is still deemed proper and is therefore made FINAL.

2. This application contains the following inventions or groups of inventions that are not so linked as to form a single general inventive concept under PCT Rule 13.1.

Further restriction to one of the following inventions is required:

I. Claims 1-2, 4-8, 11, 16-27 and 32, drawn to nucleic acids encoding the SBE enzyme of SEQ ID NO:29, a method of using the nucleic acid to alter a plant cell, and a plant cell so obtained.

IV. Claims 1, 3-8, 11, 16-27 and 32,drawn to nucleic acids encoding the SBE enzyme of SEQ ID NO:31, a method of using the nucleic acid to alter a plant cell, and a plant cell so obtained.

V. Claims 6-9, 16-27 and 32,drawn to nucleic acids encoding the SBE enzyme of SEQ ID NO:34, a method of using the nucleic acid to alter a plant cell, and a plant cell so obtained.

VI. Claims 6-10, 16-27 and 32,drawn to nucleic acids encoding the SBE enzyme of SEQ ID NO:36, a method of using the nucleic acid to alter a plant cell, and a plant cell so obtained.

Claims 1, 4-9, 11, 16-27 and 32 will be examined to the extent they read on the elected invention.

The inventions listed as Groups I and IV-VI do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: they are not so linked to form a single general inventive concept. The Groups are not drawn to nucleic acids encoding a single amino acid sequence, and each method uses a nucleic acid encoding a completely different protein. As such, the only technical feature shared by the groups is a method of using SBE genes to alter a plant cell. Cooke et al (WO 95/26407, cited in the PCT search report) teach a method

of altering potato plants with an SBE antisense construct (pg 11-13); thus, this technical feature is not special.

Applicant is reminded that nucleotide sequences encoding different proteins are structurally distinct chemical compounds and are unrelated to one another. These sequences are thus deemed to normally constitute **independent and distinct** inventions. Absent evidence to the contrary, each such nucleotide sequence is presumed to represent an independent and distinct invention, subject to a restriction requirement pursuant. This requirement is not to be construed as a requirement for an election of species, since each nucleotide and amino acid sequence is not a member of single genus of invention, but constitutes an independent and patentably distinct invention.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter and fields of search, restriction for examination purposes as indicated is proper. Additionally, a search of all sequences would represent a severe burden on PTO resources.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (703) 308-5059. The examiner can normally be reached on Monday through Friday, 8:15 am - 4:45 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paula K. Hutzell, can be reached on (703) 308-4310. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-4242 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Anne R. Kubelik, Ph.D.
July 6, 2001

DAVID T. FOX
PRIMARY EXAMINER
GROUP ~~180~~ 1638